Serial Number: 10/612,281

Filing Date: June 30, 2003

Title: BOND FINGER ON VIA SUBSTRATE, PROCESS OF MAKING SAME, PACKAGE MADE THEREBY, AND METHOD OF

ASSEMBLING SAME

Customer No. 21186

IN THE CLAIMS

Please amend the claims as follows:

- 1. (Currently amended) An article comprising:
- a wire-bonding mounting substrate including <u>an upper protective layer a first</u> surface and a lower protective layer second surface;
 - a first wire-bond pad disposed upon the upper protective layer first surface; and
- a first via in the wire-bonding mounting substrate, wherein the first via is in electrical contact with the first wire-bond pad, and wherein the first via is disposed symmetrically and directly below the first wire-bond pad.
- 2. (Currently amended) An article comprising:
- a wire-bonding mounting substrate including <u>an upper protective layer</u> a first surface and a lower protective layer second surface;
- a first wire-bond pad disposed upon the <u>upper protective layer</u> first surface; and a first via in the wire-bonding mounting substrate, wherein the first via is in electrical contact with the first wire-bond pad, and wherein the first via is disposed directly below the first wire-bond pad, wherein the wire-bonding mounting substrate includes a first edge, the article further including:
 - a second wire-bond pad disposed upon the upper protective layer first-surface;
- a second via in the wire-bonding mounting substrate, wherein the second via is in electrical contact with the second wire-bond pad, and wherein the second via is disposed directly below the second wire-bond pad; and

wherein the first via and the second via are staggered with respect to the first edge of the wire-bonding mounting substrate.

3. (Original) The article of claim 1, wherein the via includes a liner that is electrically conductive.

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(Original) The article of claim 1, further including: 4. an interconnect filling the via.

(Original) The article of claim 1, wherein the via includes a liner, further 5. including:

an interconnect filling the via.

- 6. (Original) The article of claim 1, wherein the wire-bond pad includes a first layer and a second layer, wherein at least one of the first layer and the second layer is selected from a precious metal, a precious metal alloy, silver, gold, platinum, nickel, palladium, platinum, cobalt, rhodium, iridium, and combinations thereof.
- 7. (Previously Presented) The article of claim 1, wherein the wire-bond pad includes a first layer and a second layer, and wherein the second layer is one of identical material to the first layer, or at least one of a more noble, or a softer metal than the first layer.
- 8. (Currently amended) A package comprising:

a wire-bonding mounting substrate including an upper protective layer a first surface and a lower protective layer second surface;

a first wire-bond pad disposed upon the upper protective layer first surface;

a first via in the wire-bonding mounting substrate, wherein the first via is in electrical contact with the first wire-bond pad, and wherein the first via is disposed symmetrically and directly below the first wire-bond pad;

a die disposed above [[on]] the upper protective layer first surface; and a first wire bond that couples the die to the first wire-bond pad.

9. (Currently amended) The package of claim 8, further including: a second wire-bond pad disposed upon the upper protective layer a first surface; Filing Date: June 30, 2003

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a second via in the wire-bonding mounting substrate, wherein the second via is in electrical contact with the second wire-bond pad, and wherein the second via is disposed directly below the second wire-bond pad.

- (Currently amended) The package of claim 8 further including: 10.
 - a second wire-bond pad disposed upon the upper protective layer first surface;
- a second via in the wire-bonding mounting substrate, wherein the second via is in electrical contact with the second wire-bond pad, and wherein the second via is disposed directly below the second wire-bond pad;

a second bond wire that couples the die to the second wire-bond pad; and wherein the respective lengths of the first bond wire and the second bond wire are adjusted so as to tune the package.

- (Original) The package of claim 8, further including: 11. a first bump coupled to the first via.
- (Original) The package of claim 8, further including: 12. a first bump coupled to the first via; and a first trace that makes an electrical contact to the first bump.
- (Original) The package of claim 8, further including: 13. a first bump coupled to the first via; and a larger substrate coupled to the first bump.
- (Original) The package of claim 8, wherein the first wire-bond pad is part of a 14. plurality of wire-bond pads, and wherein each wire-bond pad is directly above a corresponding via from a plurality of vias.

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15. (Original) The package of claim 8, wherein the first wire-bond pad is part of a

plurality of wire-bond pads, wherein each wire-bond pad is directly above a

corresponding via from a plurality of vias, and wherein each via is coupled to a bump.

16. (Original) The package of claim 8, wherein the first wire-bond pad is part of a plurality of wire-bond pads, wherein each wire-bond pad is directly above a corresponding via from a plurality of vias, wherein each via is coupled to a bump, and

wherein each bump is directly below a corresponding via.

17. (Currently amended) A process comprising:

forming a first via in a wire-bonding mounting substrate, wherein the wire-bonding mounting substrate includes an upper protective layer a first surface and a lower protective layer second surface, and wherein forming proceeds from the lower protective layer second surface toward the upper protective layer first surface; and

patterning a first wire-bond pad symmetrically and directly over the first via.

18. (Original) The process of claim 17, wherein forming ceases upon contact with the first wire-bond pad.

19. (Original) The process of claim 17, further including:

forming a via liner in the first via.

20. (Original) The process of claim 17, further including:

filling the first via with an interconnect.

21. (Original) The process of claim 17, wherein forming the first via precedes

patterning the first wire-bond pad.

22. (Original) The process of claim 17, further including:

filling the first via with an interconnect;

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coupling the first via to a first bump.

- 23. (Original) The process of claim 17, further including: coupling the first wire-bond pad to a first bump.
- 24. (Currently amended) A method comprising:
 forming a first via in a wire-bonding mounting substrate, wherein the wire-bonding
 mounting substrate includes an upper protective layer a first surface and a lower
 protective layer second surface, and wherein forming proceeds from the lower protective
 layer second surface toward the upper protective layer first surface;
 patterning a first wire-bond pad directly over the first via; and
 coupling a die to the first wire-bond pad.
- 25. (Original) The method of claim 24, further including: forming a second via in the wire-bonding mounting substrate; patterning a second wire-bond pad directly over the second via; and coupling the die to the second wire-bond pad.
- 26. (Original) The method of claim 24, further including: filling the first via with an interconnect.
- 27. (Original) The method of claim 24, further including: filling the first via with an interconnect; and coupling the first via to a first bump.
- 28. (Currently Amended) A computing system comprising:

 a wire-bonding mounting substrate including an upper protective layer a first surface and a lower protective layer second surface;

 a first wire-bond pad disposed upon the upper protective layer first surface;

Dkt: 884.853US1 (INTEL)

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a first via in the wire-bonding mounting substrate, wherein the first via is in electrical contact with the first wire-bond pad, and wherein the first via is disposed symmetrically and directly below the first wire-bond pad;

a die disposed on the <u>upper protective layer</u> first surface; and dynamic random-access memory coupled to the die.

- 29. (Original) The computing system of claim 28, wherein the computing system is disposed in one of a computer, a wireless communicator, a hand-held device, an automobile, a locomotive, an aircraft, a watercraft, and a spacecraft.
- 30. (Original) The computing system of claim 28, wherein the die is selected from a data storage device, a digital signal processor, a micro controller, an application specific integrated circuit, and a microprocessor.